

Abstract

A method and apparatus for processing a panel stack having one or more panels are provided. The panel stack is provided with at least one through hole. Fluid or gas

5 may be passed through the through hole. By inhibiting the contact of the fluid or gas from the flat surfaces of the panels, processing of the through holes can be accomplished with reduced resources and more quickly. Panel stacks can include one to at least hundreds of panels. Various applications include electroless copper deposition, electroplating of copper for a printed circuit board, chemical etchback or desmear,

10 honing of the through hole wall using a slurry of pumice as a replacement for chemical etchback or desmear, chemical microetching of a through hole wall, and through hole blasting with pressurized water or air to clean away any debris.